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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,669

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Takao Horiuchi

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EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

02/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,669	Applicant(s) HORIUCHI ET AL.	
	Examiner Rudy Zervigon	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 19, 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel; Satyadev R. et al. (US 6942811 B2) in view of Ohmi; Tadahiro et al. (US 6217633 B1). Ohmi teaches a substrate (14; Figure 2; column 4; line 37) processing system (Figure 2; column 4; lines 21-66) comprising: a gas supply source (19 or 20; Figure 2; column 3; lines 15-25) for supplying a first process gas containing a first reactive substance; a reservoir tank (12; Figure 2; column 3; lines 10-25) connected to said gas supply source (19 or 20; Figure 2; column 3; lines 15-25) for reserving the first process gas; a reactor (15; Figure 2; column 3; lines 10-25) connected to said reservoir tank (12; Figure 2; column 3; lines 10-25) for exposing a substrate (14; Figure 2; column 4; line 37) placed therein to the first process gas; a first circulation pipe (36; Figure 2; column 5; line 2) for introducing the first process gas from said reactor (15; Figure 2; column 3; lines 10-25) to said reservoir tank (12; Figure 2; column 3; lines 10-25); a second circulation pipe (return at 85; Figure 2; column 5; line 2) for introducing at least part of the first process gas

Art Unit: 1792

from said reservoir tank (12; Figure 2; column 3; lines 10-25) to said reactor (15; Figure 2; column 3; lines 10-25); and a flow regulating valve (85; Figure 2; column 3; line 20) disposed in said second circulation pipe (return at 85; Figure 2; column 5; line 2), the pressure pump (23; Figure 2; column 3; line 25) being a single unit operative to generate a pressure difference between said reactor (15; Figure 2; column 3; lines 10-25) and said reservoir tank (12; Figure 2; column 3; lines 10-25) to cause the first process gas to flow from said reactor (15; Figure 2; column 3; lines 10-25) to said reservoir tank (12; Figure 2; column 3; lines 10-25) without an intervening pump; a pressure pump (23; Figure 2; column 3; line 25) upstream valve (27; Figure 2; column 3; line 25) disposed between said reactor (15; Figure 2; column 3; lines 10-25) and said pressure pump (23; Figure 2; column 3; line 25); a pressure pump (23; Figure 2; column 3; line 25) downstream valve (any of 24,25; Figure 2; column 3; line 25) disposed between said pressure pump (23; Figure 2; column 3; line 25) and said reservoir tank (12; Figure 2; column 3; lines 10-25) – claim 1. Applicant's claim requirement of "a process gas containing a reactive substance" is a claim requirement of intended use in the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Patel further teaches:

Art Unit: 1792

- i. The substrate processing system of claim 1, wherein said pressure pump (23; Figure 2; column 3; line 25) is fluidly connected between said reactor (15; Figure 2; column 3; lines 10-25) and said first circulation pipe (36; Figure 2; column 5; line 2) such the pressure difference causes the first process gas to flow from said reactor (15; Figure 2; column 3; lines 10-25) to said reservoir tank (12; Figure 2; column 3; lines 10-25) through said first circulation pipe (36; Figure 2; column 5; line 2), as claimed by claim 8

Patel does not teach:

- i. a pressure pump (23; Figure 2; column 3; line 25) fluidly connected *between* said reactor (15; Figure 2; column 3; lines 10-25) and said reservoir tank (12; Figure 2; column 3; lines 10-25) – claim 1
- ii. a turbo-molecular pump connected to said reactor (15; Figure 2; column 3; lines 10-25); a turbo-molecular pump upstream valve disposed between said reactor (15; Figure 2; column 3; lines 10-25), and said turbo-molecular pump; a dry pump disposed downstream of said turbo-molecular pump; a second gas supply source for supplying a second process gas containing a second reactive substance, which is different from the first reactive substance, to said reactor (15; Figure 2; column 3; lines 10-25); and a bypass pipe connecting said second gas supply source to said reactor (15; Figure 2; column 3; lines 10-25) such that the second process gas can be supplied to said reactor (15; Figure 2; column 3; lines 10-25) without passing through said reservoir tank (12; Figure 2; column 3; lines 10-25) - claim 1

Ohmi teaches a similar wafer processing system (Figure 1) including a turbo-molecular pump (11a), a dry pump (11b), and associated valves (column 5; lines 41-48) including:

Art Unit: 1792

- i. a pressure pump (36; Figure 1) fluidly connected *between* said reactor (1; Figure 1) and said reservoir tank (10; Figure 1) – claim 1
- ii. a turbo-molecular pump (11a; Figure 1) connected to said reactor (1; Figure 1); a turbo-molecular pump (11a; Figure 1) upstream valve (18; Figure 1) disposed between said reactor (1; Figure 1), and said turbo-molecular pump (11a; Figure 1); a dry pump (11b; Figure 1) disposed downstream of said turbo-molecular pump (11a; Figure 1); a second gas supply source (16; Figure 1) for supplying a second process gas containing a second reactive substance, which is different from the first reactive substance, to said reactor (1; Figure 1); and a bypass pipe (32,45,33,10a; Figure 1) connecting said second gas supply source (16; Figure 1) to said reactor (1; Figure 1) - claim 1

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Ohmi's piping elements to the apparatus of Patel.

Motivation to add Ohmi's piping elements to the apparatus of Patel is for enabling sufficient "suction force" as taught by Ohmi (column 7; lines 1-12)

Response to Arguments

4. Applicant's arguments filed October 20, 2008 have been fully considered and they are persuasive.

5. The Examiner has proposed new grounds of rejection in view of the amendments and arguments of October 20, 2008.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1792 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

/Rudy Zervigon/

Primary Examiner, Art Unit 1792